

## Proposed Project

Upper Little Patuxent Watershed

**Project Number:** BF18

**Subwatershed:** Plumtree Branch 1

**Project Type:** Riparian Buffer  
Replacement

**Project Size:** Approx. 740 feet in length /  
0.94 acres

**Project Location:** At the corner of Pebble Branch Road and MacAlpine Road.

**Project Description:** The buffer along both sides of the stream in this area has been greatly reduced or is absent. The project would entail planting of native trees and shrubs to widen the existing buffer. Three properties are privately owned and would require homeowner cooperation.

Use of volunteer assistance for site preparation, planting and necessary maintenance and monitoring of the site could help reduce overall project cost.



### Project Benefits:

|               |  |
|---------------|--|
| Stabilization | Additional trees and shrubs will help stabilize the stream bank.   |
| Habitat       | Planting here will provide some habitat improvement but is limited by the proximity of the houses and roadway.   |
| Water Quality | A more established buffer will provide shading effects to reduce water temperature and will trap runoff and pollutants such as fertilizers from the adjacent properties. |

### Project Constraints:

|                       |   |
|-----------------------|---|
| Environmental         | No environmental/permitting constraints are present.  |
| Property Ownership    | The upstream portion of this project area is located in a right-of-way along MacAlpine Road, while the down stream portion is situated on the private properties of: 4056 and 4057 Pebble Branch Road, and 4054 MacAlpine Road. |
| Facility Access       | Access may be obtained from the intersection of Pebble Branch Road and MacAlpine Road.  |
| Design / Construction | No major constraints.   |

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### Cost Detail:

| ITEM  | QTY  | UNITS   | UNIT COST  | TOTAL<br>(Volunteer<br>Labor) | TOTAL<br>(Without<br>Volunteer<br>Labor) |
|---|------|---------|------------|-------------------------------|--|
| <b>Riparian Buffer Replacement</b>                            |      |         |            |                               |  |
| Plant Material (trees)  | 0.94 | AC      | \$3,750.00 | \$3,509                       | \$3,509                                  |
| Plant Material (shrubs)                                       | 0.94 | AC      | \$2,725.00 | \$2,550                       | \$2,550                                  |
| Mulch, Tree Shelter   | 637  | PLANTS  | \$6.00     | \$3,821                       | \$3,821                                  |
| Cost to Plant   | 637  | PLANTS  | \$6.00     | \$0                           | \$3,821                                  |
| Site Preparation (volunteer)                                  |      | AC      | \$0.00     | \$0                           | \$0                                      |
| Basic Site Maintenance and Monitoring (volunteer)             |      | AC      | \$0.00     | \$0                           | \$0                                      |
| <b>Direct Construction Subtotal</b>                           |      |         |            | \$9,880                       | \$13,701                                 |
| Base Construction Cost  |      |         |            | \$9,880                       | \$13,701                                 |
| Mobilization (10% of Directs or \$1,000)                      |      |         |            | \$0                           | \$0                                      |
| <b>Subtotal</b>   |      |         |            | \$9,880                       | \$13,701                                 |
| Contingency (30%)   |      |         |            | \$2,964                       | \$4,110                                  |
| <b>Construction Subtotal</b>                                  |      |         |            | \$12,844                      | \$17,811                                 |
| Env't'l Studies / Permitting (5% of Construction or \$1,000)  |      |         |            | \$0                           | \$0                                      |
| Landscape Design and Surveys (25% of Construction or \$5,000) |      |         |            | \$0                           | \$0                                      |
| <b>Total Capital Cost</b>                                     |      |         |            | <b>\$12,844</b>               | <b>\$17,811</b>                          |
| <b>Operations and Maintenance Costs</b>                       |      |         |            |                               |  |
| Annual Maintenance  | 5    | Percent |            | \$494                         | \$685                                    |
| Discount Rate   | 5    | Percent |            |                               |  |
| Expected Life   | 5    | Years   |            |                               |  |
| <b>Net Present Value of Annual Costs</b>                      |      |         |            | \$2,139                       | \$2,966                                  |
| <b>Life Cycle Cost</b>  |      |         |            | <b>\$15,000</b>               | <b>\$20,800</b>                          |

### Cost Notes and Assumptions:

Project costs were derived for both volunteer and paid labor. In calculating costs for volunteer labor it is assumed that local volunteer organizations could accomplish the project with County assistance and oversight. Site preparation, planting and any necessary maintenance and monitoring would be conducted by volunteers.

Planting density is planned at 1 tree or shrub planted at 8 foot intervals for a total of 681 plants per acre.

Size and species of trees and shrub plant material is based on approved Howard County Recreation and Parks information and is typically a 3-4 foot plant. Use of more mature or more immature plant material would affect the planting density and cost per plant.

Cost of plant material is based on 2009 survey of local and regional wholesale native plant nurseries. Plant material (seedlings) may also be obtained from the Maryland Department of Natural Resources, State Forest Tree Nursery at a much reduced cost or through Howard County's Stream ReLeaf program at no cost.